

TECHNICAL BULLETIN

From (department, name) KT Anders Einarsson	Date 2006-04-06	Replaces bulletin	Page 1 (7)
		Product C3400	
Subject Rebuilding of C3400 to N3400, drive units 7X5 and 8X5			

Introduction

With the introduction of the N-technique for the large pumps 3231, 3306, 3312, 3356 and 3400 during 2005 -2006, the interests of upgrading existing C-pumps to N-pumps arouse. This is a major rebuilding including the hydraulic parts like pump housing and impeller, but also the main bearings in the drive unit. This bulletin will describe the extent of a rebuilding and what parts to replace or to rework.

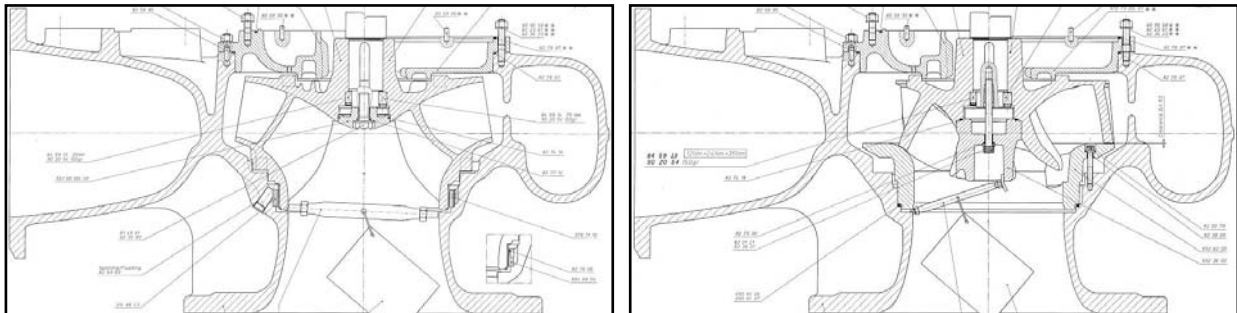
Before you do any further planning for a rebuilding, make a careful check of the system and the actual duty point for the pump. Check that the selected curve will not cause overloading of the drive unit and that the new NPSH requirements can be met properly.

Products concerned

This bulletin cover rebuilding of C 3400 pumps with pump housing part No 581 88 XX delivered from 1993 and on. The drive units used for this pump are 7X5 and 8X5.

Assembly drawing

Assembly drawings for the hydraulic end and drive units are enclosed together with trimming instructions for the N-impeller.



Parts for rebuilding

Hydraulic end

The pump housing of C 3400 has been redesigned to achieve a common housing for the C and N versions of 3400. The new pump housing, part No 695 81 XX, replaces the former pump housing, part No 581 88 XX.

Drive unit

With the N-hydraulics the impeller will create axial forces acting to lift the shaft unit. This movement is prevented by using the same main bearing arrangement as used for the horizontally installed pumps.

Vertically installed pumps with drive unit 805/815 are not possible to rebuild, as the shaft unit does not allow for the bearing rearrangement necessary for the N-impeller.

For vertically installed pumps with 7X5 and 835 - 875 drive units, bearings must be changed as follow.

The main bearing arrangement must be the "O-configuration", i.e. the configuration used for horizontal installation. For this, the outer ball bearing must be turned around and the roller bearing be replaced. We recommend a change for new bearings.

If the drive unit is EN or FM approved, the rebuilding must include the routines for repair and maintenance of those products as per separate manual.

New parts for rebuilding

N 3400 with drive unit 7X5		
Part No	pcs	Denomination
<i>Parts for the hydraulic end</i>		
695 81 XX	1	Pump housing, XX = version
692 82 00	1	Insert ring
82 00 79	4	Hex socket screw M12 x 80
82 38 00	4	Plain washer
701 61 XX	1	Impeller, XX=version 00 - 23
692 36 00	1	Impeller part
82 74 18	1	O-ring 129,3 x 5,7
82 01 21	1	Hex socket screw M16 x 160
82 38 01	1	Plain washer
82 79 30	1	O-ring 15,5 x 4,0
690 84 06	3	Support ring o.d. 418 t = 2,0
690 84 07	3	Support ring o.d. 418 t = 1,5
83 21 34	1	O-ring kit
<i>Parts for the drive unit</i>		
84 23 25	2	Ball bearing 95X200X90
83 57 59	1	Roller bearing 95X170X32
551 54 01	1	Bearing cover
554 43 00	1	Plain washer
83 05 86	1	O-ring kit

N 3400 with drive unit 835 - 875		
Part No	pcs	Denomination
<i>Parts for the hydraulic end</i>		
695 81 XX	1	Pump housing, XX = version
692 82 00	1	Insert ring
82 00 79	4	Hex socket screw M12 x 80
82 38 00	4	Plain washer
701 62 XX	1	Impeller, XX=version 00 - 23
692 36 00	1	Impeller part
82 74 18	1	O-ring 129,3 x 5,7
82 01 21	1	Hex socket screw M16 x 160
82 38 01	1	Plain washer
82 79 30	1	O-ring 15,5 x 4,0
690 84 06	3	Support ring o.d. 418 t = 2,0
690 84 07	3	Support ring o.d. 418 t = 1,5
83 21 34	1	O-ring kit
<i>Parts for the drive unit</i>		
84 23 28	2	Ball bearing 110X240X100
83 57 64	1	Roller bearing 110X200X38
560 17 01	1	Bearing cover
664 24 00	1	Plain washer
83 05 88	1	O-ring kit

80 95 52 { Only for pump without cooling jacket

80 95 51 * * *
82 23 61 * * *
82 35 23 * * *

572 90 00: 01 * *

80 95 51 * * *
82 23 61 * * *
82 35 23 * * *

82 75 13 * * *

701 61 00-23

80 58 95

80 58 95 * *

Drive unit - 7X5

Drive unit - 8X5

701 62 00-23

84 59 14
90 20 54 (50g)

24Nm → 48Nm → 70Nm
(50g)

80 58 95 * *

572 73 00: 01 * *

80 95 58 * * *
82 23 61 * * *
82 35 23 * * *

82 78 97 * *

82 78 97

Clearance 0,1-1,3

84 59 13
90 20 54 (50g)

12Nm → 24Nm → 35Nm
(50g)

82 74 18

82 79 30

82 01 21

82 38 01

690 84 06

690 84 07

82 00 79

82 38 00

692 82 00

692 36 00

696 61 00
During transport
see *

695 81 00; 01; 05; 07; 10

82 93 78

Trimming instruction see 694 68 00
Zinc anodes see 581 86 00
Accessories see 581 85 00
90 17 52 { See assy. drwg. drive unit

* * Only for pump with cooling jacket

Clamp the locking device into position by turning
and locking it by hand as tightly as possible.

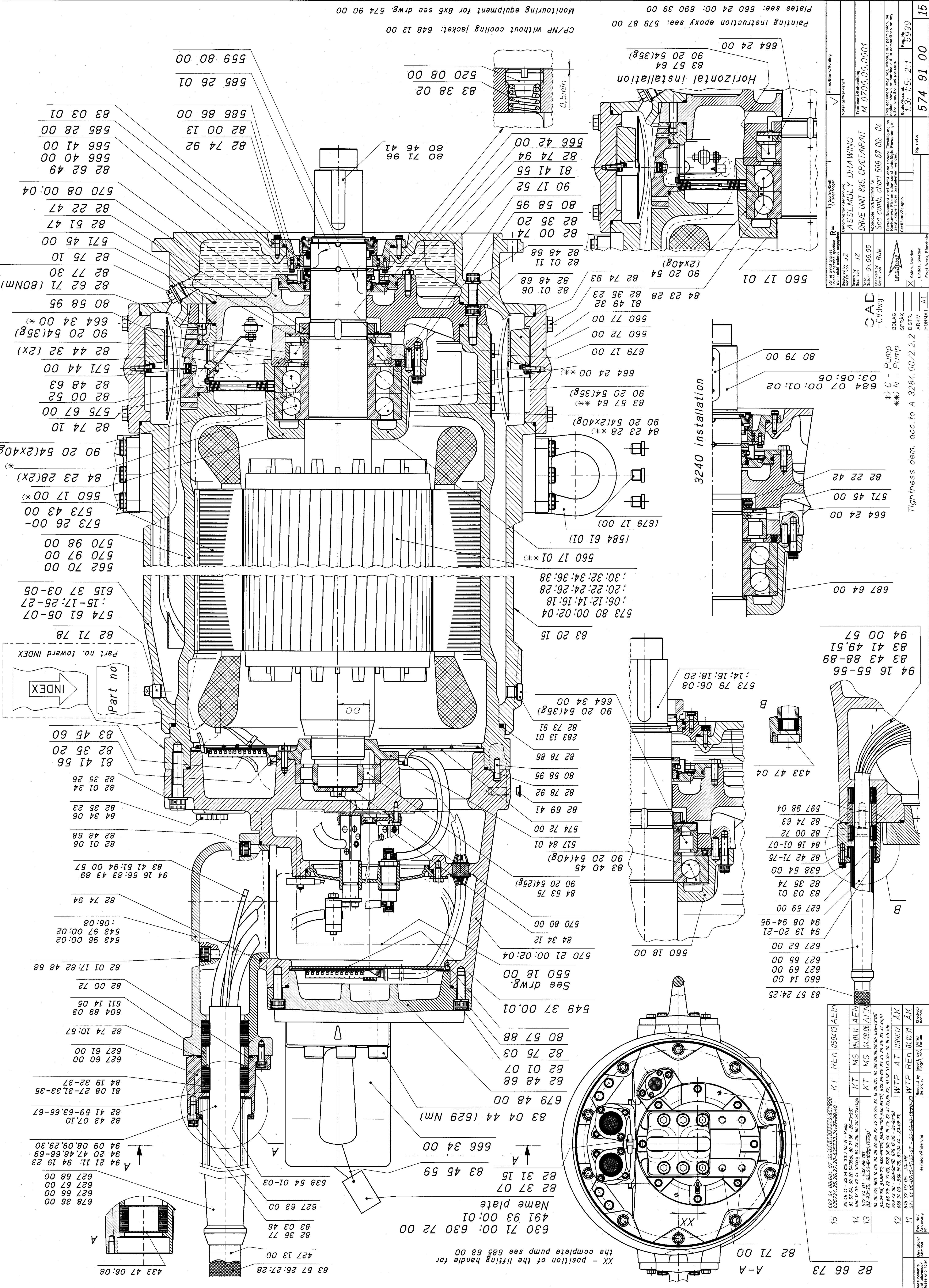
After hand-tightening the unit, turn a further
1/8 of a turn.

3	701600-692300	7016200-6923000	KT	MS	060306	A	Ein
2	823800-823705	823801-823707	KT	MS	051122	TO	TO
1	823705-823707	8220079-822011	KT	MS	051109	TO	TO
	8222000-19	8222000-99					
	8222000-77	8222000-99					

Material	ASSEMBLY DRAWING
Part No.	Hydraulic unit (N 3400)
Rev. No.	See comb. chart 599 67 04
Checked by	HeJ
Date	050203
Drawn by	kh
Designed by	kh
Approved by	
Scale	1:2
Fig. No.	3999
Fig. sets	1200
Part No.	695 38 00
Rev. No.	3

CAD
-CVDwg-
BOLAG
SPRÅK
DISTR.
ARKIV
FORMAT: A1

Trimming instruction see 694 68 00
Zinc anodes see 581 86 00
Accessories see 581 85 00
90 17 52 { See assy. drwg. drive unit



15	574 91 00	Fig. No.	5999
14	574 91 00	Fig. No.	5999
13	574 91 00	Fig. No.	5999
12	574 91 00	Fig. No.	5999
11	574 91 00	Fig. No.	5999
10	574 91 00	Fig. No.	5999
9	574 91 00	Fig. No.	5999
8	574 91 00	Fig. No.	5999
7	574 91 00	Fig. No.	5999
6	574 91 00	Fig. No.	5999
5	574 91 00	Fig. No.	5999
4	574 91 00	Fig. No.	5999
3	574 91 00	Fig. No.	5999
2	574 91 00	Fig. No.	5999
1	574 91 00	Fig. No.	5999

15	574 91 00	Fig. No.	5999
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3	574 91 00	Fig. No.	5999
2	574 91 00	Fig. No.	5999
1	574 91 00	Fig. No.	5999

Painting instruction epoxy see: 579 87 00
 Plates see: 560 24 00; 590 39 00
 CP/NP without cooling jacket: 648 13 00
 Mounting equipment for box see drwg. 574 90 00

82 71 00
 83 04 44 (629 Nm)
 666 34 00
 83 45 59
 82 31 15
 82 37 07
 Name plate
 491 93 00:01
 630 71 00; 630 72 00
 82 35 77
 83 03 46
 427 13 00
 83 57 26;27;28
 433 47 06:08

XX - position of the lifting handle for the complete pump see 685 68 00

Part no. toward INDEX
 INDEX

82 71 78
 574 61 05-07
 :15-17;25-27
 615 37 03-05
 562 70 00
 570 97 00
 570 98 00
 573 26 00-
 573 43 00
 560 17 00*
 84 23 28(2x)*
 90 20 54(2x40g)*

82 74 10
 575 67 00
 82 00 52
 82 48 63
 571 44 00
 82 44 32 (2x)
 90 20 54(35g)
 664 34 00*
 80 58 95
 82 62 71 (80Nm)
 82 75 10
 571 45 00
 82 51 47
 82 22 47
 570 08 00:04
 82 62 49
 566 40 00
 566 41 00
 585 28 00
 83 03 01
 82 74 92
 82 00 13
 586 86 00
 559 80 00

82 71 96
 80 46 41
 83 38 02
 520 08 00

82 01 11
 82 48 68
 82 01 06
 82 74 93
 90 20 54
 84 23 28
 81 49 32
 560 72 00
 560 77 00
 679 17 00
 664 24 00**
 90 20 54(35g)
 83 57 64**
 90 20 54(2x40g)
 84 23 28**
 560 17 01**
 (584 61 01)
 (679 17 00)
 80 79 00
 684 07 00:01:02
 03:05:05
 * C - Pump
 ** N - Pump

82 22 42
 571 45 00
 664 24 00
 687 64 00

82 79 06:08
 573 79 06:08
 :14;16;18;20
 664 34 00
 90 20 54(35g)
 82 73 91
 283 13 01
 82 78 86
 80 58 95
 82 78 92
 82 69 41
 574 72 00
 517 84 01
 83 40 45
 90 20 54(25g)
 84 53 75
 570 80 00
 84 34 12
 570 21 00:02:04
 550 18 00
 See drwg.
 549 37 00:01
 80 57 88
 82 75 03
 82 01 07
 82 48 68
 679 48 00
 83 04 44 (629 Nm)
 666 34 00
 83 45 59
 82 31 15
 82 37 07
 Name plate
 491 93 00:01
 630 71 00; 630 72 00
 82 35 77
 83 03 46
 427 13 00
 83 57 26;27;28
 433 47 06:08

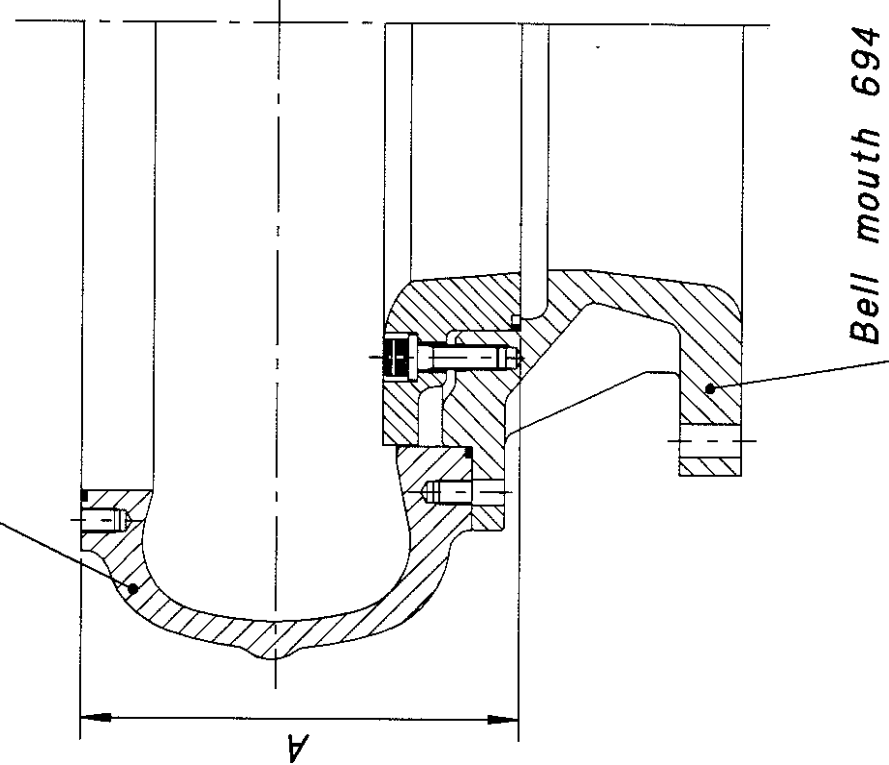
82 71 00
 A-A
 82 66 73

82 71 00
 3240 installation
 80 79 00
 684 07 00:01:02
 03:05:05
 * C - Pump
 ** N - Pump

Horizontal installation
 664 24 00
 83 57 64
 90 20 54(35g)

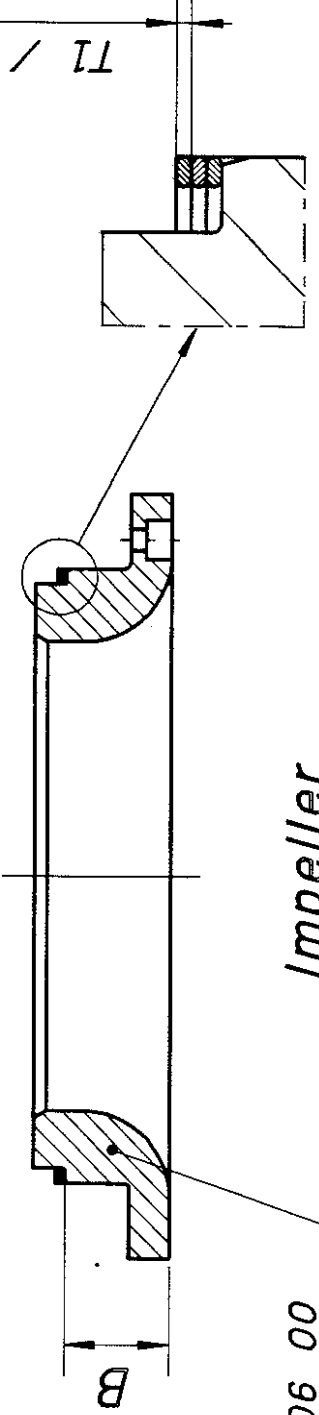
N 3312

Pump housing 572 72 XX

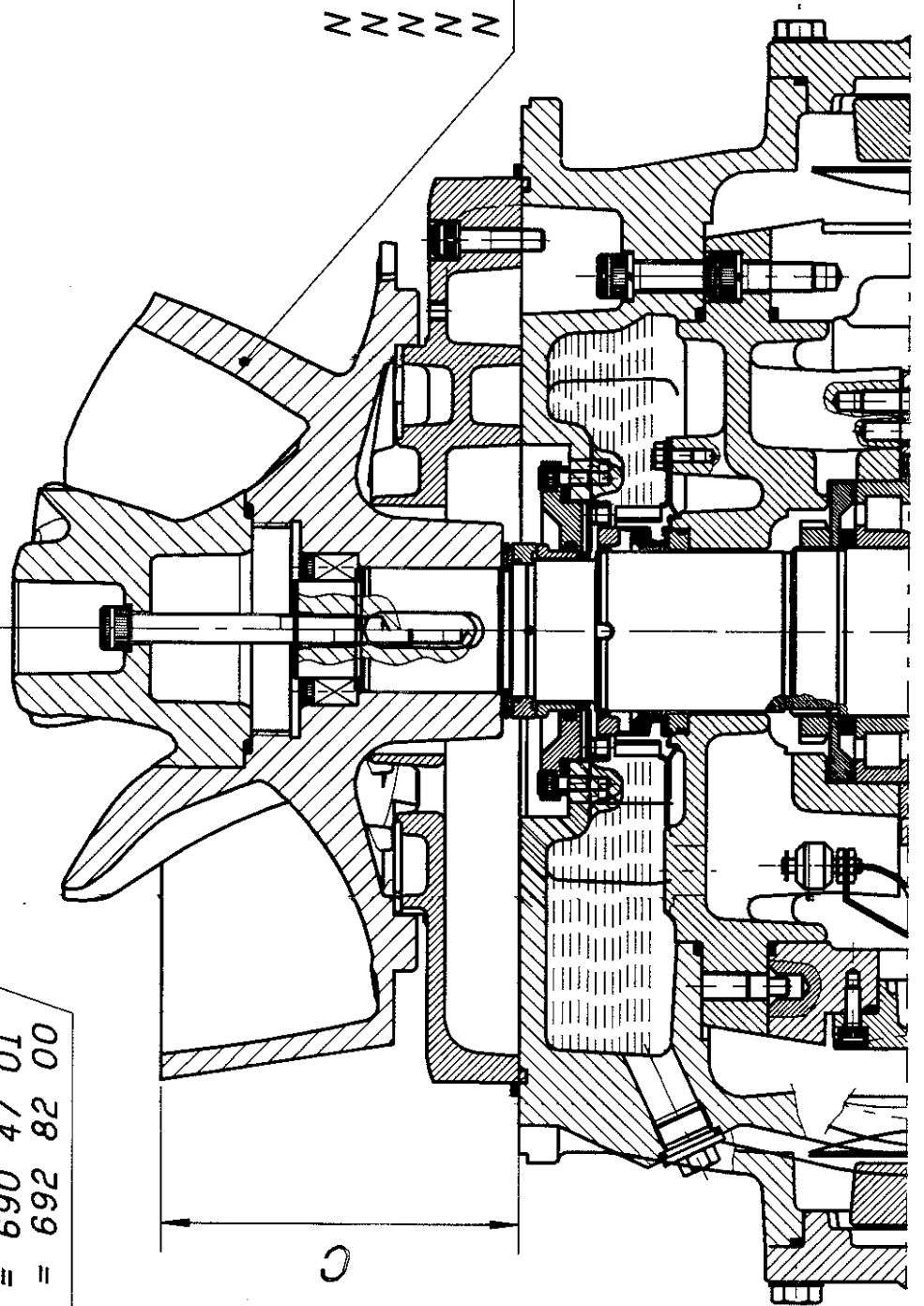


Bell mouth 694 41 XX

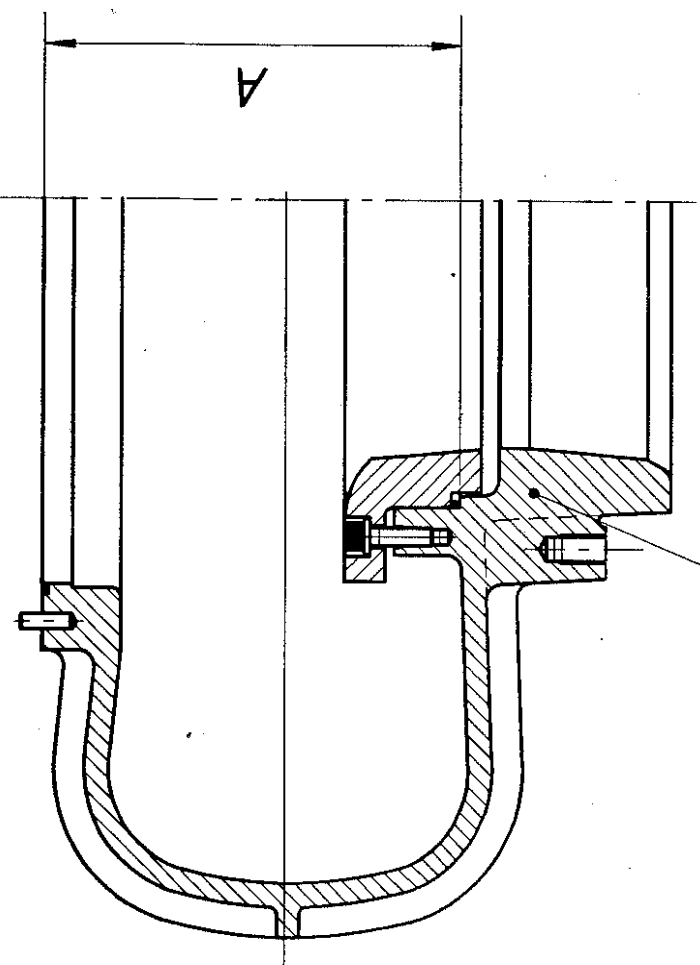
Insert ring



Impeller



Pump housing



X = A-B-C-0,5

Shims table

X	T1 (1,5mm)	T2 (2,0mm)	Hydraulic unit
3-(3,5)	690 84 01	690 84 00	(3356,3312)
3,5-(4)	690 84 05	690 84 04	(3231)
4-(4,5)	690 84 03	690 84 02	(3306)
4,5-(5)	690 84 07	690 08 06	(3400)
5-(5,5)	2	1	
5,5-(6)	1	2	
6-(6,5)	0/4	3/0	
6,5-(7)	3	1	
7-(7,5)	2	2	
7,5-(8)	1	3	
8-(8,5)	3	4	
8,5-(9)	2/6	2	
9-(9,5)	1	3/0	
9,5-(10)	1	4	

R= Slipping/Zeit
 Selbstschneiden

Denomination/Benennung
ASSY DRAWING

Applicable to/Bestimmt für
N-Impeller (N 3001-serie)

Checked by/Kontrolliert von
HeJ

Date/Datum
04.12.08

Drawn by/Gezeichnet von
kh

Checked by/Kontrolliert von
kh

Material/Werkstoff
 Treatment/Behandlung

CAD
 -CVDwg-

BOLAG
 SPRÄK
 DISTR.
 ARKIV
 FORMAT A2

Scale/Verstärkung
1:4, 1:1

Reg. No.
5399

kg. netto
694 68 00

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